



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/581,415

06/02/2006

Ulrich Maier

R.305913

3724

2119

7590

10/29/2009

RONALD E. GREIGG

GREIGG & GREIGG P.L.L.C.

1423 POWHATAN STREET, UNIT ONE

ALEXANDRIA, VA 22314

EXAMINER

BROWN, PHYLLIS M

ART UNIT

PAPER NUMBER

3753

MAIL DATE

DELIVERY MODE

10/29/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/581,415 | Applicant(s) MAIER ET AL. | |
| | Examiner MACADE BROWN | Art Unit 3753 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/29/09 has been entered.

This office action is responsive to the amendment filed on 7/06/09. As directed by the amendment: claims 10, 13-15, 18, 21, and 28 have been amended, claims 1-9 have been cancelled, and no new claims have been added. Thus, claims 10-29 are presently pending in this application.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "longitudinal axis of the first conduit portion and the longitudinal axis of the second conduit portion" forming an angle greater than 90 degrees (see claims 28 and 29), must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure

Art Unit: 3753

number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: In para. 11, line 6, it appears "brought about in a simple," in an incomplete sentence.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 10 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 10, the phrase "(swirl)", line 5, renders the claim indefinite

Art Unit: 3753

because it is unclear whether the limitation within the parentheses is part of the claimed invention. See MPEP § 2173.05(d).

Furthermore, clarification is needed for the limitation "without a constriction of this fluid stream being produced," on line 7, because a constriction is produced when this fluid stream comes in to contact with the valve element.

Regarding claim 27, it is not clear what is considered to be the metes and bounds of the phrase "an axially insignificantly distance," on line 2.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 10-27 are rejected under 35 U.S.C. 103(a) as being unpatentable

Art Unit: 3753

over Burkhardt (4,157,281) in view of Hanemann (1,105,134).

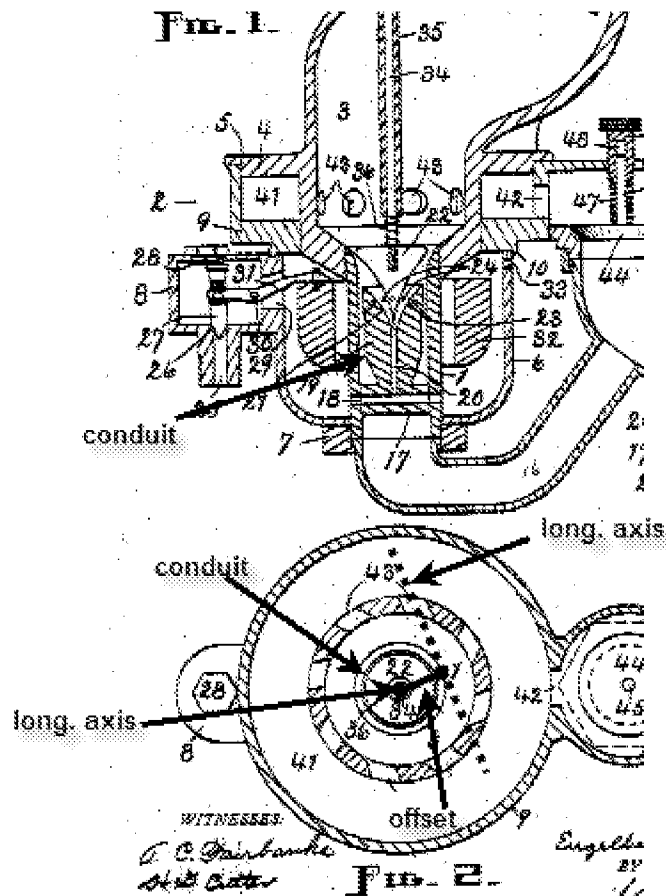
Regarding claims 10-27, as best understood, Burkhardt teaches an inlet valve assembly including a valve element 28 (fig. 2) disposed in a valve chamber 20 (fig. 1) and a fluid conduit 23/24 adjoining the valve chamber 20 on the upstream side, the valve element 28 alternatively opening and closing the fluid conduit 23/24 on the upstream side of the valve chamber 20, the fluid conduit has a substantially constant width (the width of each individual conduit is constant); wherein the fluid conduit 23/24 comprises a first conduit portion 23 and a second conduit portion 24 adjoining the first conduit portion 23, the longitudinal axes of the first and second conduit portions being at an angle less than 180° to one another; longitudinal axes of the first and second conduit portions are at least approximately at a right angle to one another; a ball as the valve element 26; wherein the first and second conduit portion 23/24, in cross section, have at least approximately the same radius; the first conduit portion 23 extends no more than an axially insignificant distance past the second conduit portion 24.

Burkhardt fails to disclose the fluid conduit is embodied such that a rotation about the longitudinal axis of the fluid conduit is impressed on the fluid stream that flows toward the valve chamber, without a constriction of this fluid stream being produced; and the longitudinal axis of the first conduit portion being laterally offset from the longitudinal axis of the second conduit portion; the lateral offset of the longitudinal axes is greater than the radius; further including a transition region between the first conduit portion and the second conduit portion, the transition region being machined by means

Art Unit: 3753

of electrochemical removal of material; the transition region includes a wall that is curved from the first conduit portion to the second conduit portion.

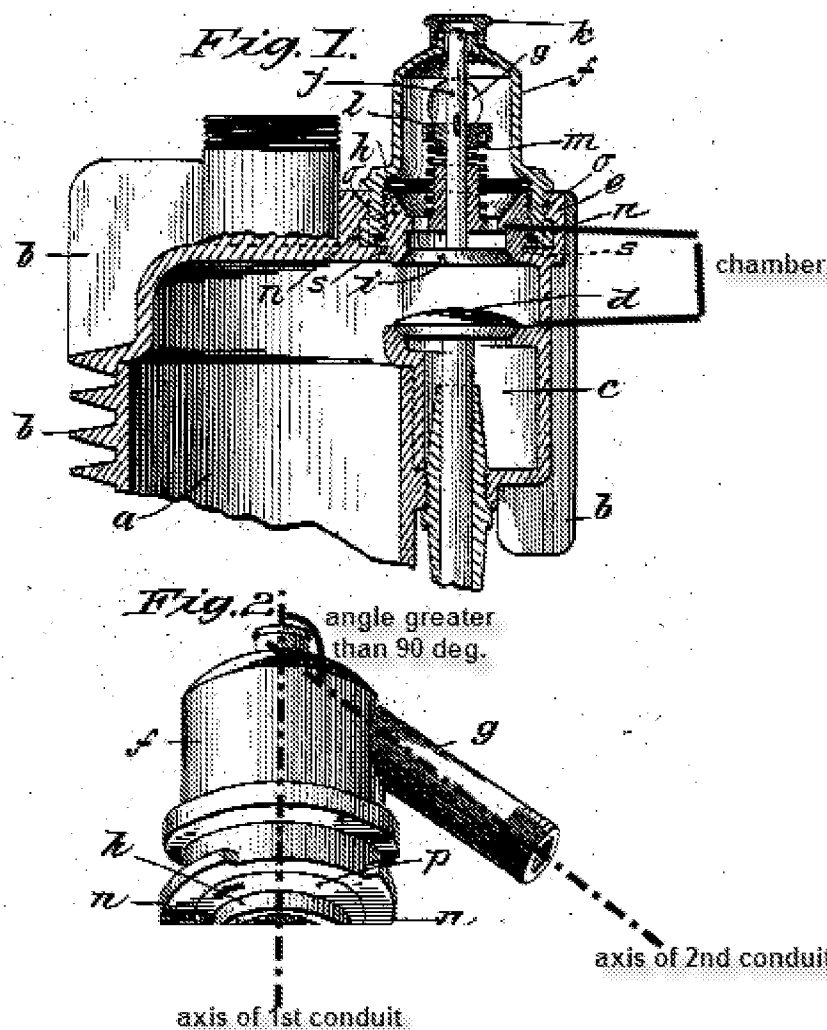
Hanemann teaches, as best understood, the fluid conduit (includes unreference conduit and conduit 43; see fig. 1 below) a has a substantially constant width and is embodied such that a rotation about the longitudinal axis of the fluid conduit is impressed on the fluid stream that flows toward the valve chamber, without a constriction of this fluid stream being produced; and the longitudinal axis of the first conduit portion 43 being laterally offset from the longitudinal axis of the second conduit portion (fig. 2 below); the lateral offset of the longitudinal axes is greater than the radius (the offset of the two axes is greater than the radius of conduit portion 43; also see fig. 2 below); further including a transition region 3 (chamber) between the first conduit portion 43 and the second conduit portion; wherein the transition region includes a wall (chamber wall) that is curved from the first conduit portion to the second conduit portion 43 [Note: the patentability of a product does not depend on its method of production, i.e. electrochemical removal. If the product in the product-by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)], to provide a tangential discharge, equally and uniformly over the valve seat, preventing localized erosion or wear of the valve, and preventing shock and deflections that tend to interfere with the valve seating and sealing functions.



It would have been obvious to one of ordinary skill in the art, at the time of invention, to employ in Burkhardt a fluid conduit embodied such that a rotation about the longitudinal axis of the fluid conduit is impressed on the fluid stream that flows toward the valve chamber; the lateral offset of the longitudinal axes is greater than the radius; further including a transition region between the first conduit portion and the second conduit portion, as taught by Hanemann, for the purpose of providing a tangential discharge, equally and uniformly over the valve seat, preventing localized erosion or wear of the valve, and preventing shock and deflections that tend to interfere with the valve seating and sealing functions.

Claims 10, 11, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hedstrom (712,929) in view of Hanemann (1,105,134).

Regarding claims 10, 11, and 29, as best understood, Hedstrom teaches an inlet valve assembly including a valve element (i; fig. 1) disposed in a valve chamber 20 (see fig. 1 below) and a fluid conduit (g/f) adjoining the valve chamber on the upstream side, the valve element (i) alternatively opening and closing the fluid conduit (g/f) on the upstream side of the valve chamber, the fluid conduit (g/f) has a substantially constant width (the width of each individual conduit is constant); wherein the fluid conduit (g/f) comprises a first conduit portion (g) and a second conduit portion (f) adjoining the first conduit portion (g), the longitudinal axes of the first and second conduit portions being at an angle less than 180° to one another (fig. 2); the longitudinal axis of the first conduit portion (g) and the longitudinal axis of the second conduit portion (f) form an angle greater than 90° (see portion of fig. 2 below).



Hedstrom fails to disclose the fluid conduit is embodied such that a rotation about the longitudinal axis of the fluid conduit is impressed on the fluid stream that flows toward the valve chamber, without a constriction of this fluid stream being produced; and the longitudinal axis of the first conduit portion being laterally offset from the longitudinal axis of the second conduit portion.

Hanemann teaches, as best understood, the fluid conduit (see fig. 1 above) a has a substantially constant width and is embodied such that a rotation about the longitudinal axis of the fluid conduit is impressed on the fluid stream that flows toward

Art Unit: 3753

the valve chamber (see fig. 2 above), without a constriction of this fluid stream being produced; and the longitudinal axis of the first conduit portion 43 being laterally offset from the longitudinal axis of the second conduit portion (fig. 2); the lateral offset of the longitudinal axes is greater than the radius (the offset of the two axes is greater than the radius of conduit portion 43; also see fig. 2 above).

It would have been obvious to one of ordinary skill in the art, at the time of invention, to employ in Hedstrom a fluid conduit embodied such that a rotation about the longitudinal axis of the fluid conduit is impressed on the fluid stream that flows toward the valve chamber; the longitudinal axis of the first conduit portion being laterally offset from the longitudinal axis of the second conduit portion, as taught by Hanemann, for the purpose of providing a tangential discharge, equally and uniformly over the valve seat, preventing localized erosion or wear of the valve, and preventing shock and deflections that tend to interfere with the valve seating and sealing functions.

Claims 14 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hedstrom (712,929) in view of Hanemann (1,105,134), as applied to claims 10, 11, and 29 above, further in view of Burkhardt (4,157,281).

Regarding claims 14 and 28, the modified Hedstrom reference discloses essentially all claimed features, but fails to disclose a ball as the valve element.

Burkhardt teaches a ball 28 (fig. 2) as the valve element to allow self-centering in relation to the seat and economical reproduction of the valve member.

It would have been obvious to one of ordinary skill in the art, at the time of invention, to employ in Hedstrom, a ball as the valve element, as taught by Burkhardt,

Art Unit: 3753

for the purpose of allowing self-centering of the valve in relation to the seat, and economical reproduction of the valve member.

Response to Arguments

Applicant's arguments with respect to claims 10-13, 15, and 16-27 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MACADE BROWN whose telephone number is (571)270-5428. The examiner can normally be reached on Mon-Thurs, 8am-4:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MACADE BROWN /
Examiner, Art Unit 3753

/John Rivell/
Primary Examiner, Art Unit 3753